

Our Saviors Lutheran Church
1035 Carol Lane Lafayette
DX Interest Group Meeting
With Dave Piersall, N6ORB 6:30pm
*** License Testing 6pm ***

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MAY PROGRAM

ARKnet Wireless Emergency Internet



Michael Steiber, AI6MS, will describe ARKnet, the first step toward building a Wireless Emergency Intranet for the City of Cupertino that will support emergency responders with a high-speed data network. This multi-site network uses a 5.8 GHz ISM backbone and includes off-grid solar sites throughout the city. This forum will provide an overview of the system including design considerations, initial

deployment of the primary sector and client sites, and operational analysis of the system functionality.

A copy of Marcel's presentation slides is available here:

https://www.dropbox.com/s/pfbis6n5uf16va3/PacificonPresentation2016_AI6MS_ARKnet_v6_WM.pdf?dl=0

A multi-part video of Marcel's presentation at Pacificon 2016 on this topic is on YouTube here:

<https://www.youtube.com/watch?v=NWGH1UvYUIY&>

AI6MS is an Electrical Engineering alumnus of California Polytechnic State University in San Luis Obispo and is currently a Hardware Systems Integration Lead at Amazon Lab126 in Sunnyvale, CA. He also serves on the Cal Poly Electrical Engineering Industry Advisory Board. He is a former President and current Industry Advisor to the Cal Poly Amateur Radio Club (www.W6BHZ.org). Marcel regularly volunteers to help at local repeater workdays as an RF technician and tower climber. He also enjoys helping with community events and providing communications for bike rides and triathlons. An ARRL Life Member first licensed in 2008, he is also an ARRL Volunteer Examiner and has helped license over 673 hams since 2009! AI6MS especially enjoys portable stations and events, APRS, ARDF, and out of the ordinary operating locations (like aboard a jet ski or bicycle!).





Greg Aton, AG6TF
Patrick King, KM6OLW
Gary Pedro, KF6FPU
Megan Pedro (license pending)
William Pedro (license pending)

If you hear any of these new members on the air, please welcome them to our club.

— *Tom Deeble, KA6SIP*



When you purchase at Amazon dot com smile, a portion of your purchase is donated to our club.

Go to:
<https://smile.amazon.com/ch/23-7072059>

ALL MEMBERS ARE INVITED TO JOIN THE CLUB E-MAIL GROUP.
DOWNLOAD FILES, INCLUDING *THE CARRIER* IN **FULL COLOR** AS WELL AS SHARE INFORMATION WITH THE MEMBERSHIP AT:

<https://groups.io/g/MDARC>

(the Yahoo group will be abolished)

Mount Diablo Amateur Radio Club W6CX
P.O. Box 23222 Pleasant Hill, CA 94523
(925) 288-1730

The Carrier is a monthly publication of the Mount Diablo Amateur Radio Club (MDARC). It is the policy of the editor to publish all material submitted by the membership provided such material is in good taste, relevant to amateur radio and of interest to MDARC members, and provided space is available.

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mdarcmembership@mdarc.org

PACIFICON 2019
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Vicki Zumwalt, N6KLS, Julie Mah, WJ8MAE

Registration: Debbie Deeble
Treasurer: Jim Siemons, W6LK
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Annual Auction - Jim Siemons, W6LK
Communications Trailer - Larry Loomer, KI6LNB
Communications Van - [vacant]
Digital Media - Mike Patterson, N6JGA
Education & Training - John Primus, AF6RJ
Field Day - Larry Loomer, KI6LNB
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Repeater Trustee W6LGW - Dick Brown, KT6X
Repeater Trustee W6CX - Jay Caldis, KT6Y
Technical Committee Chair - Jim Siemons, W6LK

The Carrier Newsletter
Editor, Matthew G. Vurek, N4DLA
n4dla_cs245@yahoo.com
Proofreader - Larry Loomer, KI6LNB
Printing: Tom Deeble, KA6SIP

Amateur Television Help and Information:
Fred Coe, WB6ASU wb6asu@icloud.com

ANNOUNCEMENT OF FIELD DAY 2019 PLANNING MEETING

My Fellow Hams,

There is a Field Day Committee meeting on Friday, May 17, 2019 at 7:00pm, before the membership meeting, at Our Savior's Lutheran Church in Lafayette.

We will review our list of activities and the plans for the meals.

If you would like to help plan the 2019 Edition of MDARC's Field Day, I hope to see you there.

73, Larry Loomer, KI6LNB

What is Field Day?

Field Day is a ham radio picnic, a campout, a practice for emergencies, an informal contest and, most of all, FUN! The American Radio Relay League (ARRL) Field Day is the single most popular on-the-air event held annually in the US and Canada. On the fourth weekend of June of each year, more than 35,000 radio amateurs gather with their clubs, groups or simply with friends to operate from remote locations.

It is a time when many aspects of Amateur Radio come together to highlight our many roles. While some will treat it as a contest, other groups will use the opportunity to practice their emergency response capabilities. It is an excellent opportunity to demonstrate Amateur Radio to the organizations that Amateur Radio might serve in an emergency, as well as to the general public. For many clubs, ARRL Field Day is one of the highlights of their annual calendar.

The Mount Diablo Amateur Radio Club Field Day activity will be located at Heather Farm Park at 301 North San Carlos Drive (at Ygnacio Valley Road) in Walnut Creek, on Saturday, June 22, beginning at 11:00 AM, to Sunday, June 23, ending at 11:00 AM.

The contest part simply involves contacting as many other stations as possible while learning to operate our radio gear in abnormal situations and in less than optimal conditions.

We use these same skills when we help with public events such as marathons and bike-a-thons; fund-raisers such as walk-a-thons; celebrations such as parades; and exhibits at fairs, malls and museums. These are all large, preplanned, non-emergency activities.

But, despite the development of very complex, modern communications systems—or maybe because they ARE so complex—ham radio has been called into action again and again to provide communications in crises when communication really matters. Amateur Radio operators (also called “hams”) are well known for our communications support in real disaster and in post-disaster situations.

For further information, contact Larry Loomer at larryloomer@yahoo.com.

President's Message



May 2019

MDARC Family,

MDARC had a great opportunity on April 20th to showcase amateur radio, MDARC1 and the Trailer at the Cowell Safety and Security Fair. It was nice to have the invitation to attend this event and to have such a visual, full force presence. Thanks to Dick Wade, WM6G for being our liaison between MDARC and the Cowell HOA and thanks for all those MDARC-ians who helped with set up and representing the Club.



Say, about THE Auction! Again Jim Simeons W6LK, our “truthful” and faithful auctioneer did a great job of encouraging us to add to our radio gear. Sure we may need to add another shelf in the ole ham shack or move the 200’ of unused coax to another location, but we now have new (used) “treasures.” I’ve

heard reports of some acquiring some great gear for very low cost. Of course, both sellers and the Club benefit from these sales, so it sounds like a win-win for everybody.



Coming to your in-box in the near future: At the encouragement of Larry Loomer, KI6LNB, MDARC Secretary, the Board has been crafting a member survey to get member feedback. In the industry in which I work, we call this Voice of the Customer which is a nice way to say we want to know what you think about the Club and what we can do to make a better member-serving Club. Since every returned survey is important, please take the time when it arrives to complete it.

We tote Elmering as a high point of the amateur radio experience. If you don't believe me, just listen to your fellow hams reminisce about the value they place on those who have provided instruction and advice to them in the past. I've yet to hear anything negative about those Elmers who stepped up to the plate to share their knowledge and love for the hobby. I could use a little Elmering to help with these needs:

- Help tune my Hy-Gain AV-680 nine-band antenna. A couple of weekends ago I pulled out the installation manual for the section on tuning the 80-meter band and my goal was to get a useable SWR for 3.5000 to 3.9760 MHz so I could participate in the nets held on these frequencies. After lowering the antenna, I followed the tuning instructions by judiciously cutting equal sections from the capacitance hat. My MFJ 269C-Pro showed that the SWR was getting better, although not ≤ 2.0 . I did not want to overcut the capacitance hat so raised the antenna and retested.....SWR off the charts!
- Help me "navigate" the basics, and the bells and whistles of my Yaesu FT DX-3000 transceiver so I feel skillful in using it.

- Help me understand how to useand make useful.....my MFJ 939 tuner.
- Help me add my Heathkit SB-200 linear amplifier to my Yaesu FT DX-3000 and show me how to use it.
- Help me run second power line to me ham shack which is located at the back corner of my lot.

Hey, I know I'm a needy guy! But what I may lack in skill and knowledge is offset by my willingness to learn and do.

Before I go, let me remind you to sign up for Pacificon [10/18-20]: Pacificon.org

Also, Field Day is just weeks away: 6/22-23 so plan to join us at Heather Farm Park. You can't miss us because right up front adjacent to Ygnacio Valley Road.

"The greatest motivational act one person can do for another is to listen." Roy E. Moody

73 Larry Bradley KK6QPE
05/07/19



2019 Annual Club Auction Report

On Friday April 26, 2019, our club held its annual auction. Over 100 items were listed for sale. Old and new, they represented a wide variety of receivers, transmitters, amplifiers, transceivers, test equipment and accessories from across the radio spectrum. By the end of the evening, nearly all of the equipment had new owners and the club had enriched its finances.

Club President Larry Bradley, KK6QPE, assisted by Club Director Mike Warren, W6MEW and Marilyn Warren, checked in the bidders and sellers. ARRL East Bay Section Manager Jim Siemons, W6LK, a past club president, served as auctioneer. He was assisted by Jim Brunk, N6BHX, Patrick Miller, KK6DBX and Bob Fournoy, KK6FZU. W6LK's verbal talents worked wonders on the crowd of bidders. As a result, many wallets were opened and money flowed to Club Treasurer Cathi Walton, K2CJW, who was assisted by Digital Media Chair Mike Patterson, N6JGA.

— *Text and Photos by N4DLA*



N6BHX, W6LK and KK6FZU with their auction skills in action (top) while before the auction, prospective bidders checked out the tables (below).



COMMUNICATIONS SUPPORT FOR THE MOUNT DIABLO TRAIL CHALLENGE

By Larry Loomer, KI6LNB

On Saturday, April 13, 2019, eleven hams met at Castle Rock Recreation Area, adjacent to Diablo Foothills Regional Park, for the purpose of receiving last minute instructions from the lead ham for the Diablo Trails Challenge. Present were John KM6ZJT, Larry KM6ORH, Diane K4IWM, Jeff KJ6RHF, Larry KK6QPE, Frank KF6FIO, Jan KM6NFC, Tim KA6TIM, Eoin KK6Q, Tom KM6BCT and a third Larry KI6LNB.

There were four races associated with this assignment: 5K, 10K, 1/2 Marathon and 50K. For reference, 50K is 31.07 miles. For further reference, this event was sponsored by Save Mt. Diablo, a non-profit group that preserves, defends and restores the natural land of the mountain area for the enjoyment of all who choose to enjoy the park and its wildlife. The 50K race was the longest race, so this race had most of the ham communicators along its path.

There were approximately 180 runners in the 50K race, 325 runners in the 1/2 Marathon race, 325 runners in the 10K race and 300 runners in the 5K race.

A preliminary Ham Radio Operator Assignment sheet had been emailed out to the hams earlier in the week, and the final assignment sheet had been emailed the previous day. Some hams had expressed early departure requirements from the event, and they were accommodated by having assignments that terminated early in the day. The Ham Radio Operator Assignment sheet also specified the mode of ham radio communication that would be used for this event. For this event, the Mt. Diablo Amateur Radio Club repeater, W6CX, was used. Its statistics were 147.060 MHz, + offset and a PL of 100.0 Hz.

After the kickoff meeting, the hams dispersed to their assigned locations on the mountain. The event organizers, Brazen Racing, who have organized this race for many years, had established six aid stations along the 31 mile course. Ham radio operators were assigned to each of those aid stations. The runners were instructed to report any injuries or other emergencies to the aid station personnel, who, in turn, would report the information to the ham at that aid station.

It was learned that the race bib colors were the same as the previous year: 5K yellow bibs, 10K blue bibs, 1/2 Marathon red bibs and 50K green bibs. The bibs identify the race that the runner is participating in and the registration number of the runner. In times of medical emergency, the casualty runner is identified by only his bib number for privacy purposes, and the bib number is used for tracking purposes on the race trail.

The race is electronically timed, using a chip built into each racer's bib, to give each racer an accurate elapsed time for the distance that they ran. The chips are also used to record the runner's having crossed the finish line, therefore logging them out of the electronic racing system computer, providing the race organizers a convenient and accurate listing of run times for each participant, which can be presented on a log sheet after the runner has completed the race.

The race organizers have two tasks that they ask of the hams: Report the lead male runner and the lead female runner through each aid station, so that the organizers can judge how fast the runners are progressing along the trail. The other task is to record the bib numbers of the 50K runners as they pass through the aid station. This is to facilitate the monitoring of each runner's progress along the course, in order to be able to locate, approximately, where a runner might have gotten lost if they do not cross the finish line at the end of the event.

The 50K race began at 0630 hours, before the hams were dispersed to their assignments, so that these runners could get out on their course, and not present a hindrance to the runners in the other races. The 1/2 Marathon race began at 0830 hours; the 10K race began at 0900 hours; and the 5k race began at 0930 hours. The start times were staggered to avoid as much intrarace congestion as possible.

At 0745 hours, a roll call was initiated by net control, to determine if all hams had found their station assignments and if communication was possible for each ham from their assigned locations. Net control was located at the Start/Finish line. Also located at the Start/Finish line was the announcer's booth. Lively and motivating music was played from the announcer's booth for the duration of the race. This music became a hindrance to the successful passing of traffic for the nearby hams.

A compromise was reached: When each wave of runners was set forth from the Start/Finish line, the announcer would play motivating music to spur on the runners as they started. After each set of runners had left the starting line, the music would be turned down, and the speaker that was aimed toward the Net Control location would be turned away from net control. This was done so that traffic from the field, in which the announcer was interested, would be passed accurately by the hams. He wanted accurate reports, so he agreed to turn down the volume of the music when the runners were not being sent off onto their courses. This compromise worked out well.

The first assignment was at the Start/Finish line. The ham stationed at this location was the interface person, or shadow, to the race organizers. He carried verbal messages from Net Control to the lead organizer situated at this location, from which the races were started, and where the official timing clocks were located.

The next aid station along the trail was called Boundary Gate. All of the runners passed through this station on their way out to their specific running courses. This gate is located at the boundary between the Diablo Foothills Regional Park and Mt. Diablo State Park. The 5K runners go a short distance past this station to the 5K turnaround, from which they head back to the finish line. The 10K runners and the 1/2 Marathon runners take a trail to the left and go to the Little Pine Aid Station.

The Little Pine station assignment had been a communication problem area for the hams in the past. It was located down in a valley, with a ridge line of hills between the station and the repeater that was being used for radio communication. Tim, KA6TIM, who was assigned to this station, used his past experience at this station, along with some antenna expertise, to establish a useable signal to the repeater from his location. New this year was the location of the aid station up on Northgate Road itself, as opposed to 0.10 mile down the trail to the former location of the aid station. The race volunteers would have had to carry all of their aid station equipment and food down the trail and through the mud to get to the former aid station location. This new location facilitated the staging of supplies at the aid station, rather than having the Brazen Racing volunteers carry the supplies from the road to the old aid station site.

The next 50K aid station was located at Rock City. The Rock City hams will be noted for their willingness to remain on station after the sweep passed by, to note if there was a runner following after the sweep. A sweep is a designated person, often symbolically carrying a broom, who follows behind the last runner in the race, to assure race management that no one has been left behind in the race. Sometimes a runner starts after the sweep has departed to perform his sweeping function, thus causing the sweep to not be performing his job properly, by having a race participant located behind the sweep. A further consequence of having a runner behind the sweep is that the sweep picks up the course marking ribbons, so the runner will not have the ribbons in place to know where the course is.

As it turned out, the slow runner never showed up at Rock City, but appeared at another aid station downstream from Rock City. The Rock City hams further distinguished themselves by accepting another assignment, after their assignment at Rock City was completed.

Curry Canyon Ranch was the next 50K aid station. This station is located down on the flatland on the east side of Mt. Diablo. The runners have to lose all of their elevation gain from the first part of the race by running down to Curry Canyon Ranch.

At various points along the route, the runners might decide that the race is too much for them to handle. Hopefully, that decision will be made at an aid station, and the aid station ham can make arrangements through net control and the race management to have the tired runner(s) transported back to the Starting Line. This transportation is usually done in a SAG vehicle. SAG stands for Supply and Gear. This vehicle takes care of transportation of race participants, and their bicycles if it is a bicycle event. The SAG vehicle also transports supplies like food and ice from one aid station to another aid station. A SAG can transport the participant's gear from the beginning of an event to the end. A SAG can also contain tools for the on-road repair of a bicycle, or a rack for transporting the bicycle back to the starting line. A SAG can be driven by a ham, or a ham can be a passenger in the SAG, directing the SAG driver with orders from net control.

The run up to the Curry Point Aid Station regains all of the runners' elevation that was lost in the run down to Curry Canyon Ranch. From here, it is all uphill to the Summit Aid Station, with a pass-through at Horse Camp.

At the Summit Aid Station, there is a great view of the Golden Gate Bridge and the Pacific Ocean to the west, as well as a great view of the Sierra Nevada Mountains to the east. There are two peaks at the summit of Mt. Diablo - South Peak and North Peak. The aid station is located on South Peak, the higher of the two peaks, and the most developed of the two peaks for tourists to visit.

A SAG was used to replenish the supply of ice and water at the Summit Aid Station. When this aid station realized that they were running out of ice and water, the aid station ham called to Net Control to locate a source of ice and water for his aid station. Net Control broadcasted a message to all of the hams that the Summit Aid Station needed more ice and water, and did any aid station have an excess amount of these commodities to share with the Summit Aid Station. The Curry Point Aid Station had just closed, and replied that they had excess ice and water left over that was available. Net Control asked the Summit ham if he had a volunteer that could drive to Curry Point to pick up the needed items. A Summit volunteer was located to make the pickup, and the goods were delivered to the Summit Aid Station in good time.

The runners go from South Peak to North Peak, and then begin the descent down the mountain.

The Juniper Campground Aid Station is the next stop for the runners. At this aid station, the ham coordinated a park ranger, who drove down a fire trail to remove two runners that could go no further.

Following a stop at Juniper Campground, the runners proceed down to Burma Crossing Aid Station. After leaving Burma Crossing Aid Station, the runners rejoin the trail leaving the Start/Finish area and, again, pass through the Boundary Gate Aid Station, on their way to the finish line. At the finish line, the runners are greeted by the race announcer who greets them by name and city as they cross the finish line. Completion medals are passed out to the runners as they cross the finish line. Their day's work is complete.

As the last runner crosses the finish line, the race promoter goes through his computer records to determine if every runner that started the races has completed the races. With the help of the hams, he has been informed of the bib numbers of the runners that have decided to not complete the race and have asked to be SAGed to the starting line. The race organizers have the runners put an emergency phone number on their registration paper, so that, in times like this of reconciliation of records, that the runner can be called to find out if they are safe at home. Two phone calls located the missing runners at their homes. All runners are accounted for.

There was only one medical issue, a runner tripped over a root on the trail sustained a knee injury.



(Photo courtesy of Brazen Racing)

MDARC BOARD OF DIRECTORS MEETING

Black Bear Diner, Walnut Creek, CA

April 1, 2019

Attendees: Larry Bradley KK6QPE, Larry Loomer KI6LNB, Cathi Walton K2CJW, Ron Bunch W4FEK, Trevor Hall WA6JAU, David Piersall N6ORB, Mike Warren W6MEW, John Primus AF6RJ, Mike Patterson N6JGA, Eric Ferguson KA6USJ, Jim Siemons W6LK, Misa Siemons KJ6BUE, Cal Vasquez K6VT, and Marilyn Warren W6MEW-YL. The vice president was absent.

6:58 The meeting was called to order by President Larry Bradley. Introductions were made around the table. Minutes of the last meeting were approved without comment. The agenda was reviewed.

President: No report. Vice President: Absent Secretary: No Report.

Treasurer: The additions to the budget report for March, and the present status of the treasury, were reviewed.

Education: The General class has begun, with a total enrollment of 27. The first class had 19 students. There were 11 Elmers present.

Pacificon: The Pacificon website will be launched on April 10. The committee is pursuing banquet speakers. Saturday license testing will be moved to the Pacific Room. Technician and General classes will be moved to the Tri-Valley 1 and 2 Rooms. The price of attendance will not be raised. The hotel room rate went up. The breakfast price went up. The banquet price will be \$59. There will be a Pacificon Committee meeting at the Trinity Lutheran Church on April 8.

Emergency Communications: No report.

Digital: The committee has most of the historical *Carrier* newsletters on digital media.

Outreach: Absent

Technical: All systems are GO. North Peak - Ubiquity System is working well.

Auction: The committee is looking for helpers to move the donated equipment from the shop to the church. Some auction gear was picked up in Oakland. The tables will be set up at 5:00. Come at 6:00 to register equipment for the auction. The auction will start at 7:00. The new date is April 26, 2019.

Vehicle: The van went to a school in Stockton on a Saturday. A lot of kids got acquainted with ham radio due to the presence of the van and the ham volunteers.

Trailer: Glue-on MDARC logo appliques are being made to go over the Martinez police department logos on the trailer.

Field Day: The Field Day banners will be hung next Ygnacio Valley Road in front of Heather Farm Park for 2 weeks by the Walnut Creek Parks and Recreation Department.

License Testing: No report. Public Service: No report. Membership: No report.

Unfinished Business: Disaster Recovery Program: The committee is working on the official advertisement for the solicitation of prospective clients.

Survey Questions: The discussion of the questions that were presented by the Secretary was tabled to permit the board to go over the questions for discussion at the next board meeting.

Board Obligations: A sheet was passed out identifying past board-approved policies that had not been implemented by the board. Motion: It is resolved that the board will no longer be bound by operational policies, passed by previous boards, that occurred before January 1, 2001. (*Motion passed with one dissenting vote-LHB KK6QPE*)

8:00 The composition of the Digital Media Committee, and the possession of the passwords for the digital media files, were tabled until the next board meeting.

On the subject of self-insuring MDARC equipment, the information in the previous policy will stand and a MDARC treasury deposit of \$630 will be added to the online copy of MDARC policy.

On the subject of priority usage of the MDARC repeaters, this was tabled until the Emergency Communications Committee comes up with a priority plan.

8:50 A board member recounted his experience with Mobility Matters on Saturday, March 23, 2019, in which those hams that had signed up for participation in Mobility Matters activities were emailed 24 hours before an exercise in Lafayette, to report to the Mobility Matters popup at 7:00 AM on Saturday morning. It wasn't until 6:00 AM on Saturday that he found out where the hams were to report. Cell phones were used for communication, in place of ham radio. It was a disappointing experience.

The cleanup of the Rodie's storage locker was discussed briefly. The storage locker needs an organization and cleanup and shelves. Some items in the locker might be auction candidates. (*Clean up most likely to occur after Field Day-LHB KK6QPE*).

The Cowell HOA Safety Fair on April 20 was discussed. When the MDARC Outreach Committee person returns, MDARC participation will be discussed further.

A report on the 2019 Contra Costa County Science and Engineering Fair, held in Pittsburg on March 15 and 16, was presented to the board. It was agreed that MDARC participation in this fair was a positive experience and should be continued in 2020.

9:08 The meeting was adjourned.

Respectfully submitted,

Larry Loomer, MDARC Secretary.



ANNUAL ARMED FORCES DAY CROSS-BAND TEST (11 May 2019)

The Army Military Auxiliary Radio System will host this year's Armed Forces Day (AFD) Crossband Test on Saturday May 11, 2019. This annual event is open to all licensed amateur radio operators, and will not impact any public or private communications. For more than 50 years, military and amateur stations have taken part in this event, which is only an exercise scenario, designed to include hobbyist and government radio operators alike.

The AFD Cross-band Test is a unique opportunity to test two-way communications between military communicators and radio stations in the Amateur Radio Service (ARS), as authorized in 47 CFR 97.111. These tests provide opportunities and challenges for radio operators to demonstrate individual technical skills in a tightly-controlled exercise scenario that does not impact any public or private communications.

Military stations will transmit on selected military frequencies and will announce the specific ARS frequencies monitored. All times are ZULU (Z), and all frequencies are Upper Side Band (USB) unless otherwise noted. The frequencies used for the test will not impact any public or private communications, and will not stray outside the confines of the exercise.

The following stations will be making two-way radiotelephone contacts with stations in the ARS between the time periods listed on the frequencies listed in kilohertz below.

AAZ / FT HUACHUCA, AZ				
1500Z - 2359Z	5,330.5	14,438.5	18,211.0	
ABH / SCHOFIELD BARRACKS, HI				
1600Z - 2300Z	5,357.0	14,438.5	18,272.0	20,997.0
ABM1 / CAMP ZAMA, JAPAN				
1500Z - 0100Z	14,487.0	20,994		
ADB / CAMP FOSTER, OKINAWA				
1500Z - 0100Z	14,487.0	20,994		
WAR / PENTAGON WASHINGTON, DC (USB + CW + RTTY)				
1200Z - 2400Z	5,357.0	13,963.5	18,211.0	24,760.0
WUG-2 / ARMY CORPS OF ENGINEERS, TN (USB + CW)				
1300Z - 0200Z	5,403.5	13,910.5	18,293.0	20,973.5
AIR / ANDREWS AFB				
1200Z - 2400Z	4,517.0	7,305.0	15,807.0	20,740.0
AGA2SY / HANCOCK FIELD, NY				
1200Z - 2400Z	4,575.0	7,540.0	13,993.0	
AGA5SC / SCOTT AFB, IL				
1600Z - 2300Z	3,308.0	4,872.0	7,545.0	
AGA9TR / TRAVIS AFB, CA				
1600Z - 0100Z	5,346.5	7,329.0	13,996.0	14,411.0
AFM4AF / NAVAL SUPPORT ACTIVITY MID-SOUTH MILLINTON, TN				
1200Z - 0300Z	7,375.5	13,498.0		

MARS RADIO /					
1400Z - 0100Z	7,460.0	14,606.0	20,991.0		
MARS COMM /					
1400Z - 0100Z	4450.0	7473.5.0	14405.0		
NIW / USS MIDWAY CV-41 SAN DIEGO, CA (USB + CW + RTTY)					
1400Z - 0200Z	4,013.5	5371.5	7,493.5	14,383.5	18,293.0
NWKJ / USS YORKTOWN CV-10 CHARLESTON, SC					
1200Z - 2200Z	4,000.0	7,360.0	14,663.5		
NEPM / USS IOWA BB 61 LOS ANGELES, CA					
1500Z - 2359Z	4,043.5	6,903.5	14,463.5	18,293.0	
NWVC / LST-325 EVANSVILLE, IN (USB + CW)					
1200Z - 0400Z	4,007.0	6,913.0	9988.5	13,974.0	
NSS / US NAVAL ACADEMY ANNAPOLIS, MD (USB + CW)					
1300Z - 0200Z	4,038.5	5330.5	7,533.5	9,447.0	14,487.0
	17,545.0				
NAF / NEWPORT NAVAL RADIO STATION MUSEUM NEWPORT, RI (USB + CW)					
1200Z - 2359Z	4,013.5	7,542.0	14,383.5		

An AFD message will be transmitted utilizing the Military Standard (MIL-STD) Serial PSK waveform (M110) followed by MIL-STD Wide Shift FSK (850 Hz RTTY) as described in MIL-STD 188-110A/B. Technical information regarding these waveforms is provided at:

http://www.n2ckh.com/MARS_ALE_FORUM/MSDMT.html.

The AFD message will also be sent in Continuous Wave (CW) and Radio Teletype (RTTY) as indicated beside the station names.

The message will be transmitted on the following frequencies in kilohertz and at the listed times:

Frequency (kHz)	1400Z	1420Z	1440 Z	1500 Z	1900Z CW RTTY	1920Z CW RTTY	1940Z	2000Z CW	2200Z	2220Z CW RTTY	2240Z CW RTTY	2330Z CW
5,346.50												NWVC
7,540.00												NWVC
13,506.50	AGA2SY	WAR		AAZ	WAR			NWVC	ADB	WAR		
17,443.00		AGA2SY	WAR	AAZ		WAR			AGA2 SY		WAR	

For those who wish to document their contacts with a QSL card, go to <http://www.usarmymars.org/events> and complete the request form.

2019 Ham Radio Auxiliary Classes Registration Available Now online!

Mt. Diablo Amateur Radio Club

Location: Trinity Lutheran Church, 2317 Buena Vista Ave.

Walnut Creek, CA 94597 – **All Auxiliary Classes start at 7:00 pm**

Registration online is required

Emergency Communications Readiness, with Bill Shaffer, N6SGT
Thursday June 20, 2019

Emergency Communications FLDIGI, with Klaus Berkner, K6KHB
Thursday June 27, 2019

Introduction to DX, with Dave Piersall, N6ORB-08/01/2019
Thursday August 1, 2019

Portable Operations, with Dave Piersall, N6ORB
Thursday, August 8, 2019

To see the MDARC Schedule including the
Next Technician license Class for your friends -Starting Aug. 15 - Oct 3, 2019

Go To: <http://www.mdarc.org/activities/education/Classes>

For NON-License Auxiliary class questions email: info@mdarc.org

For the Technician Class questions email: HamRadioClass@gmail.com

**Your registration is not complete until payment is received on the
MDARC registration page.**





Nevada State Amateur Radio Convention

NVCON
RENO-TAHOE 2019

July 19 - 20, 2019

Boomtown Casino Hotel • Reno, NV

● **Friday Amateur Radio Academy**

In-depth Classes / Workshops

● **One Day Tech Class**

Get Your Amateur Radio License in a Day

● **Amateur Radio Forums**

Presentations on Amateur Radio Related Topics

● **Exhibitors & Vendors**

Popular Amateur Radio Vendors and Exhibitors

● **Saturday Ham Swap**

Sell, Buy, Trade starting at 6am

● **Radio Exams**

Tech, General & Extra Exams

● **Raffle Prizes**

Amateur Radio Raffle Prizes

● **and more**

visit <http://nvcon.org> for more info

<http://nvcon.org>

HAM RADIO OUTLET

14 STORE BUYING POWER!

ICOM



IC-7600 | All Mode Transceiver

- 100W HF/6m Transceiver, gen cov. receiver • Dual DSP 32 bit • Three roofing filters- 3, 6, 15kHz • 5.8 in WQVGA TFT display • Hi-res real time spectrum scope



IC-7200 | HF Transceiver

- 160-10M • 100W • Simple & tough with IF DSP • AGC Loop Management • Digital IF Filter • Digital Twin PBT • Digital Noise Reduction • Digital Noise Blanker • USB Port for PC Control



IC-7100 | All Mode Transceiver

- HF/50/144/430/440 MHz Multi-band, Multi-mode, IF DSP • D-STAR DV Mode (Digital Voice + Data) • Intuitive Touch Screen Interface • Built-in RTTY Functions



ID-5100A | VHF/UHF Dual Band Digital Transceiver

- Analog FM/D-Star DV Mode • SD Card Slot for Voice & Data Storage • 50W Output on VHF/UHF Bands • Integrated GPS Receiver • AM Airband Dualwatch • FM Analog/DV Repeater List Function

ID-51A | VHF/UHF Dual Band Transceiver

- 5/2.5/1.0/0.5/0.1W Output • RX: 0.52-1.71, 88-174, 380-479 MHz** • AM/FM/FM-N/WFM/DV • 1304 Alphanumeric Memory Chls • Integrated GPS • D-STAR Repeater Directory • IPX7 Submersible



KENWOOD



TS-590SG | HF/50MHz Transceiver

- Equipped with 500 Hz/2.7 kHz roofing filter as standard • ALC derived from TS-990S eliminating spike issues • Antenna output function (shared with DRV connector) • CW - morse code decoder function



TM-D710G | 2M/440 Dualband

- V+V/V+U/U+U operation • Built-in GPS • Built-in TNC for APRS & DX-Cluster operation • 50W 2M & UHF • 1,000 memories • Dual receive • Green or amber backlight colors • Latest APRS firmware w/new features • Sky Command II remote functions



TM-V71A | 2M/440 DualBand

- High RF output (50W) • Multiple Scan • Dual receive on same band (VxV, UxU) • Echolink® memory (auto dialer) • Echolink® Sysop mode for node terminal ops • Invertible front panel • Choice of green/amber for LCD panel • 104 code digital code squelch



TM-281A | 2 Mtr Mobile

- 65 Watt • 200 Memories • CTCSS/DCS • Mil-Std specs • Hi-quality audio

TH-F6A | 2M/220/440

- Dual channel receive • .1 - 1300 MHz (cell blocked) RX • FM, AM, SSB • 5W 2M/220/440 TX, FM • 435 Memories • Li-Ion Battery



YAESU
The radio



FT-991 | HF/50MHz/2M/440 Transceiver

- 160 M-440MHz - SSB/CW/FM/C4FM Digital/AM/RTTY/PSK • 100 W (2M/440: 50 Watts) • 3.5" TFT full-color touch panel operation • High speed spectrum scope • Roofing filters: 3kHz & 15kHz • 32-bit high speed floating point IF DSP



FTDX1200 | 100W HF + 6M Transceiver

- Triple Conversion Receiver With 32-bit Floating Point DSP • 40 MHz 1st IF with selectable 3 kHz, 6kHz & 15 kHz Roofing Filters • Optional FFT-1 Supports AF-FFT Scope, RTTY/PSK31 Encode/Decode, CW Decode/Auto Zero-In • Full Color 4.3" TFT Display



FT-450D | A100W HF + 6M Transceiver

- 100W HF/6M • Auto tuner built-in • DSP built-in • 500 memories • DNR, IF Notch, IF Shift



FTM-400DR | 2M/440 Mobile

- Color display-green, blue, orange, purple, gray • GPS/APRS • Packet 1200/9600 bd ready • Spectrum scope • Bluetooth • MicroSD slot • 500 memory per band

FT-60R | 2M/440 5W HT

- Wide receiver coverage • AM air band receive • 1000 memory channels w/alpha labels • Huge LCD display • Rugged die-cast, water resistant case • NOAA severe weather alert with alert scan



5 Ways to Shop!

- RETAIL LOCATIONS - Store hours 10:00AM - 5:30PM - Closed Sunday
- PHONE - Toll-free phone hours 9:30AM - 5:30PM
- FAX - All store locations
- ONLINE - WWW.HAMRADIO.COM
- MAIL - All store locations

ANAHEIM, CA
(800) 854-6046

OAKLAND, CA
(877) 892-1745

BURBANK, CA
(877) 892-1748

SAN DIEGO, CA
(877) 520-9623

NEW CASTLE, DE
(800) 644-4476

PORTLAND, OR
(800) 765-4267

DENVER, CO
(800) 444-9476

PHOENIX, AZ
(800) 559-7388

ATLANTA, GA
(800) 444-7927

WOODBIDGE, VA
(800) 444-4799

SALEM, NH
(800) 444-0047

PLANO, TX
(877) 455-8750

ONLINE STORE
WWW.HAMRADIO.COM

New Store!

Contact HRO for promotion details. Toll-free including Hawaii, Alaska and Canada. Call will be routed to the nearest store. All HRO 800-lines can assist you. If the first line you call is busy, you may call another. AZ, CA, CO, GA, VA residents add sales tax. Prices, specifications and descriptions subject to change without notice.



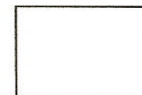
The Carrier

Newsletter of the Mt. Diablo Amateur Radio Club

P.O. Box 23222

Pleasant Hill, CA 94523

www.mdarc.org



NEXT MONTH:

FIELD
DAY
2019



www.arrl.org

FIRST CLASS

<https://www.facebook.com/mdarc.org>

W6CX Nets

M-F 5:42 am Morning Muster 147.060+ 224.780- 441.325+

M-F 6:10am Commuter Net 147.060+ 224.780- 441.325+

Monday 8:00 pm SATERN Net 147.060+

Tuesday 7:30 pm Fat City 10 meter USB/CW Net 28.420 MHz

Tuesday 8:00pm Digital Practice Net 147.060+ 224.781-
441.325+

Wednesday 7:00 pm SKYWARN Net 147.060+

Thursday 7:30 pm MDARC Club Net 147.060+

Thursday 8:00 pm Amateur Television Net 147.060+

FM 147.060 MHz + / PL 100Hz -

224.780 MHz - / PL 77Hz 441.325 MHz + / PL 100Hz

EchoLink: W6CX-R /133896, IRLP: 3057

<https://www.broadcastify.com/listen/feed/25334>

D-STAR 145.000 offset plus 2.5 MHz

<https://w6cx.dstargateway.org/>

ATV Internet Stream: <http://w6cxatv.mdarc.org/>

Contra Costa County Emergency Communications Nets

Every Thursday

<http://www.coco-races.org/meetings/nets/>

6:35 pm HF Countywide 3.893 MHz LSB

6:45 pm West County 145.110-- (82.5 PL)

7:00 pm Central County 145.680 Simplex

7:00 pm East County 146.535 Simplex

7:00 pm South County 147.480 Simplex

7:20 pm Countywide 145.490-- (107.2 PL)

or 147.735-- (107.2 PL)

or 145.410-- (107.2 PL)

Concord Auxiliary Radio Emergency Service (CARES)

Wednesday 8:00pm 147.405 Simplex

Digital Amateur Television Repeater

Digital ATV Output: 1244.500

Digital ATV Inputs: 1292.500, 1273.0, 917.0, 430.0

Analog ATV Input: 1270.000 FM (PL 192.8)

May and June 2019 Club Calendar

Friday May 17, 2019	7:30pm	MDARC General Meeting - Our Savior's Lutheran Church 1035 Carol Lane, Lafayette
Saturday June 1, 2019	8:00am	MDARC Technical Committee Meeting - Ygnacio Valley Library 261 Oak Grove Road, Walnut Creek
Monday June 3, 2019	7:00pm	MDARC Board of Directors Meeting - Black Bear Diner 700 Bancroft Road, Countrywood Shopping Center, Walnut Creek
Friday June 21, 2019	6:00pm	MDARC General Meeting - Our Savior's Lutheran Church 1035 Carol Lane, Lafayette